UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/577,964	03/27/2007	Andreas Benner	022862-1096	1374

34044 7590 11/14/2011

MICHAEL BEST & FRIEDRICH LLP
100 EAST WISCONSIN AVENUE
MILWAUKEE, WI 53202

EXAMINER	
GRAHAM, GARY K	

ART UNIT	PAPER NUMBER
3727	

NOTIFICATION DATE	DELIVERY MODE
11/14/2011	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

mkeipdocket@michaelbest.com

Office Action Summary	Application No.	Applicant(s)	
	10/577,964	BENNER, ANDREAS	
	Examiner	Art Unit	
	GARY GRAHAM	3727	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *11 January 2011*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on _____; the restriction requirement and election have been incorporated into this action.

4)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

5)☒ Claim(s) *1-4 and 6-20* is/are pending in the application.

5a) Of the above claim(s) _____ is/are withdrawn from consideration.

6)☐ Claim(s) _____ is/are allowed.

7)☒ Claim(s) *1-4 and 6-20* is/are rejected.

8)☐ Claim(s) _____ is/are objected to.

9)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

10)☐ The specification is objected to by the Examiner.

11)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

12)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

13)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 11 January 2011 has been entered.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-4, 6, 8-13 and 18-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kakuta et al (US patent 6,378,160) in view of Frey et al (US patent 5,337,439) and Gries (EP publication 0806329).

The patent to Kakuta discloses the invention substantially as is claimed. Kakuta discloses a wiper device including a wiper shaft (1) that is provided with a recess (1a) and means (2,8) for accommodating the wiper shaft such that a free end (1c) protrudes therefrom. An annular locking element (10), provided with an interruption (between ends 10a), is arranged in the recess and is used for partially locking the wiper shaft in the axial direction in the accommodating means. The locking element rests on a stop disk (9) which is supported by the accommodating means. The locking element has an essentially round transverse cross-section. The recess has at least one approximately 45 degree slope (1b) in the axial direction of the shaft, along which the locking element can glide when a predetermined force is applied to the wiper shaft.

The patent to Kakuta discloses all of the above recited subject matter with the exception of the locking element having an essentially rectangular cross-section and a particular force at which wiper shaft release or gliding occurs.

The patent to Frey discloses a wiper device (fig.1) wherein an elastic locking element (8) having an essentially rectangular cross-section and interruption (11) is provided in a recess (6) in the wiper shaft (1). The recess includes an approximately 45 degree slope (7) to enable the locking element to glide thereupon when a sufficient axial force (12) is applied to the shaft.

It would have been obvious to one of skill in the art to provide the locking element of Kakuta as essentially rectangular in cross-section instead of round, as clearly suggested by Frey, to increase the material contact with the stop disk thus reducing stress concentrations as well as a mere art recognized equivalent cross sectional shape for the locking element. Both round and rectangular cross-sections are well known.

The publication to Gries discloses a wiper device (figs.1,2) wherein an elastic locking element (7) with interruption (15) is provided in a recess in the wiper shaft (2). Upon impact with a pedestrian, the locking element expands and the wiper shaft moves from the position shown in solid line in figure (1) to the position shown in broken line. Gries establishes wiper shaft release upon pedestrian impact forces.

It also would have been obvious to one of skill in the art to provide or set the locking device of Kakuta as releasing upon impact with a pedestrian, as clearly suggested by Gries, to enable protection of pedestrians in the event of impact. While Kakuta discloses release of the locking element to protect components of the wiper device and vehicle, Gries clearly establishes that releasing forces can also be set to protect pedestrians. While Gries does not set forth specific forces at which the wiper shaft will release, one of skill in the art would by routine experimentation find the optimal force required, including as claimed, to cause release of the locking element in a manner to prevent damage or injury to pedestrians. The particular ranges set forth do not appear to produce a new and unexpected result which is different in kind and not merely degree from that which is suggested by Kakuta/Gries.

With respect to claim 8, setting forth that the locking element is embodied as a stamped part does not act to distinguish from the element disclosed by Kakuta. Such relates to the method of making the locking element and is not distinguishable in the product claim, at least not here.

Claims 7 and 14-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kakuta et al (US patent 6,378,160) in view of Frey et al (US patent 5,337,439) and Gries (EP publication 0806329) as applied to claims 1, 4, 5, 6 and 13 above, and further in view of Horng (GB publication 2,375,158).

The patents to Kakuta, Frey and Gries disclose all of the above recited subject matter with the exception of the recess having a tub-shaped structure defining two sloped areas on opposite sides of a seat area.

The publication to Horng discloses that fastener receiving recesses (12, fig. 6) in rotary shafts (1) can be tub-shaped to define a bottom seat area with first (132) and second (142) sloped areas on each side thereof. The recess is adapted to receive a locking element component (3) in clip or washer form. The recess is so shaped to reduce sharp edges and therefore reduce the possibility of damage to the bearing (94) during assembly of the shaft therein.

It would have been obvious to one of skill in the art to provide the recess of the modified Kakuta device with an additional sloped area on the opposite side of the seat area from the first sloped area, as clearly suggested by Horng, to reduce the possibility of damage to the bearing (8) during assembly.

With respect to claim 15, setting forth that the locking element is embodied as a stamped part does not act to distinguish from the element disclosed by Kakuta. Such relates to the method of making the locking element and is not distinguishable in the product claim, at least not here.

Response to Arguments

Applicant's arguments with respect to claim 1 have been considered but are moot in view of the new ground(s) of rejection. As set forth above, Gries clearly establishes that within windshield wiper devices, release of locking elements can be made to occur at force levels achieved upon pedestrian impacts. Such a teaching will clearly provide for setting the Kakuta device to release within the claimed forces ranges, at least upon optimization of force levels to maximize pedestrian

protection. Thus while Kakuta discloses force levels to protect various components of the windshield wiper device, such force levels could be made to protect pedestrians from injuries as clearly suggested by Gries.

Applicant argues that Kakuta does not teach or suggest a structure in which a maximum load is easily calculable. Such is not persuasive in overcoming the rejection. The relative ease or difficulty with which a maximum load can be calculated from structure suggested by Kakuta/Frey does not appear at issue with respect to the claims. Kakuta/Frey disclose all of the claimed structure. Additionally, as the combination of Kakuta and Frey results in the claimed structure it is unclear how applicant has determined that load calculation will be more difficult. Applicant goes on to argue that the axial force that is required to push in the wiper shaft of Kakuta is too undefined. Again, as the combination of Kakuta and Frey results in the claimed structure it is unclear how such structure will have a required axial force that is anymore "undefined" than applicant's.

Applicant's discussion of Frey is noted, but not particularly understood. Initially, applicant is referred to column 3, lines 1-26 of Frey. Applicant sets forth that the snap ring (8) cannot slide along the bevel section (7) shown in figure 1, apparently because the formation of a sleeve (pinion 3?) surrounds the snap ring. Such is not persuasive. In Frey, annular groove (5) within the pinion (3) allows for expansion of the elastic locking element (8) during wiper shaft (1) being moved axially to the right in figure 1. Such movement occurs upon the application of an impact force applied in direction (12) to the wiper shaft. Upon such movement, the encircling sloping surface of bevel section (7) of annular groove (6) engages the elastic locking element (8) to expand and release such. While applicant discusses plastic deformation of the locking element and destruction of such, there appears no basis for this. Frey clearly establishes that the locking element is elastically deformed (col.3, lines 17+). Frey further establishes that the elastic locking element snaps back or returns to

the annular groove (6) upon return of the shaft to its operating position. Thus the basis of applicant's statement of locking element destruction is queried. In any event, such is not particularly relevant as Frey is only relied upon to teach the rectangular transverse shape for the locking element. Applicant's suggestion that a combination of the Kakuta and Frey documents cannot result in the formation according to the claimed invention is noted but not persuasive. Both Kakuta and Frey are specifically directed to release of shafts for axial movement upon the application of impact forces.

Applicant's discussion of Horng is noted. While, as pointed out by applicant, Horng does not discuss pedestrian impact protection, he is not relied upon to teach such. Horng is only relied upon to teach sloped areas on both sides of a seat area. To provide the modified Kakuta device with an additional sloped area on the opposite side of the seat area from the first sloped area, as clearly suggested by Horng, to reduce the possibility of damage to the bearing (8) during assembly appears desirable. Applicant's statement that one of skill in the art would not look to Horng when designing a wiper arm connection is noted but not persuasive. All of the above relied upon references involve shaft retention with locking elements received in grooves of such shafts. It is unclear why one would not look to Horng to provide improvements with Kakuta particularly with respect to assemblage.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to GARY GRAHAM whose telephone number is (571)272-1274. The examiner can normally be reached on Tuesday to Friday (7:00-5:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Monica S. Carter can be reached on 571-272-4475. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Gary K Graham/
Primary Examiner, Art Unit 3727

GKG
07 November 2011